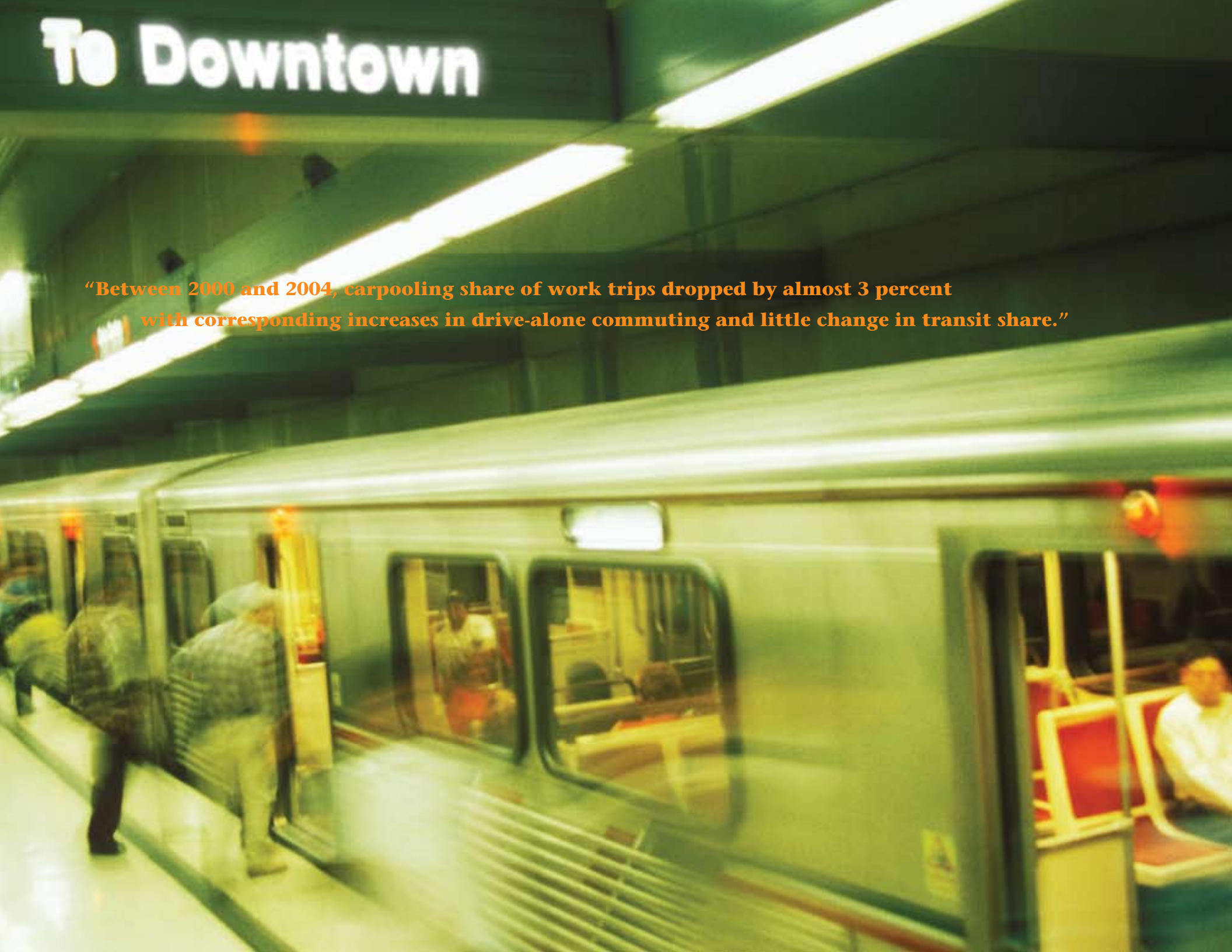


"Between 2000 and 2004, carpooling share of work trips dropped by almost 3 percent with corresponding increases in drive-alone commuting and little change in transit share."

TRANSPORTATION

Highway Use and Congestion

Why is this important?

Highway congestion causes delays affecting personal mobility and goods movement and results in increased economic and social costs. In addition, congestion impacts the region's air quality. The number of vehicle miles traveled (VMT) indicates the overall level of highway and automobile usage, and is directly related to mobile source emissions.

How are we doing?

As a major gateway for international trade reliant on effective transportation, Southern California has been experiencing very high levels of congestion. Contributing factors include large population and physical extent of the region, rapid population growth, high automobile dependence, low levels of transit usage, and a maturing regional highway system with limited options for expansion.

Larger metropolitan regions generally have higher levels of congestion than smaller metropolitan regions. Specifically, among the metropolitan areas in the nation, the average number of hours of delay per resident is higher in larger metropolitan areas than in smaller metropolitan areas.[1] Population in the SCAG region has been growing faster than that in the nation for at least the last five decades.

The high automobile dependence in Southern California is reflected in its relatively high automobile ownership. Among the nine largest metropolitan regions, the SCAG region had the third highest household vehicle ownership (93 percent), the third highest number of vehicles per household (1.71) and the second highest number of vehicles per worker (1.35).[2] The region had, however, the third low-

est share (4.5 percent) of workers using transit to get to work, and the share of transit in all daily trips was only 2 percent.[3] *Among the nine largest metropolitan regions, Southern California had some of the highest dependence on automobiles despite of having the lowest median household income as well as per capita income*. With low transit usage and high dependence on cars, the region's relatively high residential density also contributes to high levels of congestion.

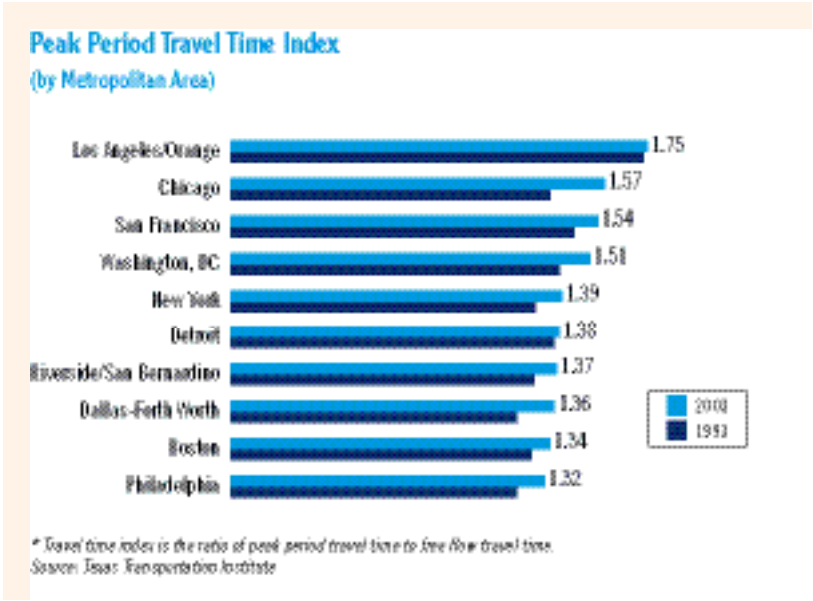
Currently, the region has about 14 million vehicles and close to 11 million licensed drivers. The region's highway system, including about 9,400 lane miles of freeway and more than 43,000 lane miles of arterials, is a maturing system with limited options for expansion. This is particularly true for southern Los Angeles County and northern Orange County. The region currently has the nation's most extensive High-Occupancy Vehicle Lane (HOV) system with more than 660 lane miles that accounted for more than 20 percent of HOV lane miles. Almost all daily trips (99 percent) rely on the freeway and arterial network in the region. About half of the daily VMT took place on the region's freeway system.[4] Peak period congestion on the arterial street system occurs generally in the vicinity of activity centers, at bottleneck intersections, and near many freeway interchanges.

In a recent survey conducted by UCLA, over 80 percent of the Southern California respondents indicated that they frequently experienced congestion.[5] Work trips, because the majority takes place during the peak period, naturally experienced a higher level of congestion than non-work-trips. However, congestion experienced during non-work trips is less predictable than during work trips.

Between 1993 and 2003, the SCAG region (particularly Los Angeles and Orange counties) consistently ranked as the most congested metropolitan region in the nation. Congestion level is measured by indicators such as travel time index or annual delay per traveler. For example, in 2003, a traveler in Los Angeles/Orange counties during the peak period spent 75 percent more time than if traveling at free-flow speed. At 1.75 in 2003, Los Angeles/Orange counties have the highest travel time index among the nation's major metropolitan areas (Figure 43). The Chicago region had the second highest at 1.57. Riverside/San Bernardino counties, with an index of 1.36 in 2003, ranked 7th highest. Nationally, congestion has grown in every metropolitan area regardless of size but has been most severe within the largest metropolitan areas.

Though Los Angeles/Orange counties had the nation's highest congestion level, their travel time index increased little between 1993 and 2003 while other metropolitan areas experienced much larger increases in congestion levels. During this period, the travel time index in Los Angeles/Orange counties rose very slightly from 1.73 to 1.75, while it increased from 1.34 to 1.57 in Chicago and from 1.44 to 1.54

Figure 43



in San Francisco. Significant investment in transit (e.g. the Red Line and light rails) and HOV system since 1990 contributed to the slower increase in congestion level in Los Angeles and Orange counties. The travel time index in Riverside/San Bernardino counties increased from 1.27 to 1.37 during the 10-year period.

In 2003, a traveler in Los Angeles/Orange counties during the peak period experienced a total of 93 hours of delay, the highest among major metropolitan areas (see Figure 79). A traveler in Riverside/San Bernardino counties experienced a total of 55 hours of delay, the 9th highest. Close to half of the delay resulted from accidents.

Among the nine largest metropolitan regions, the SCAG region (particularly the southern Los Angeles and northern Orange counties) had the highest percentage (88%) of peak VMT under congested travel. Total cost incurred due to congestion was almost $12 billion in 2003, significantly higher than any other metropolitan region (see Figure 80).

In 2004, total daily vehicle miles traveled (VMT) in the region reached about 422 million, which was about 2 percent higher than in 2003.[6] Within the region VMT increased more significantly in the Inland Empire (3.5 percent) due to higher population growth compared to the 1 percent increase in the costal counties (Los Angeles, Orange, and Ventura).

Highway Fatalities

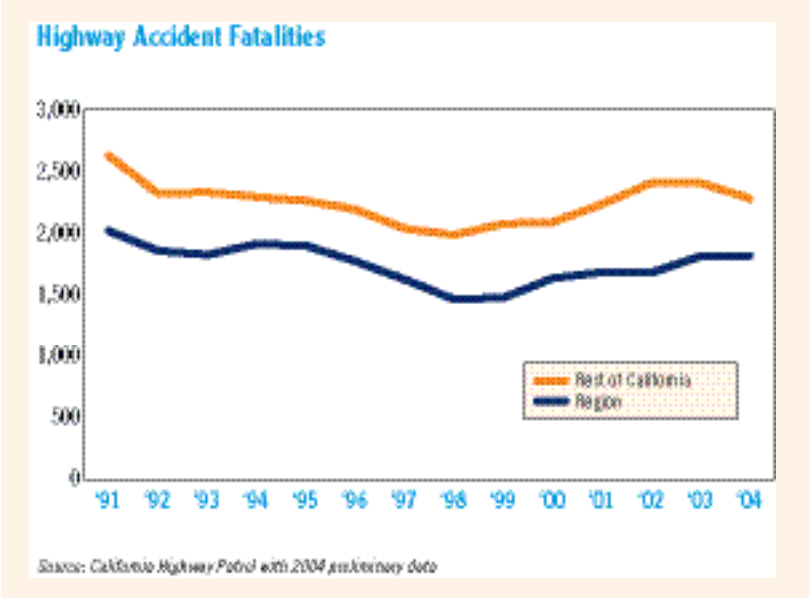
Why is it important?

Transportation accidents are the ninth leading cause of death in the United States. *Highway accident fatalities, about 42,600 deaths in 2004, account for about 95 percent of transportation-related deaths. Highway accidents are the leading cause of death for people between the ages of 4 and 33.*[7] Highway accidents also accounted for close to half of the total annual delay of the region's highway system.

How are we doing?

In 2004, motor vehicle crashes in the region resulted in 1,822 fatalities (almost 5 deaths per day), the highest since 1995 (Figure 44). *This was a very slight increase (0.4 percent) from the 1,815 fatalities in 2003 after an 8 percent increase during the previous period.* However, for the rest of California, total number of highway fatalities between 2003 and 2004 decreased by more than 5 percent. At the national level, total number of highway fatalities decreased slightly from 42,884 deaths in 2003 to 42,636 deaths in 2004, about a 0.6-percent decline, after the 0.3 per-

Figure 44



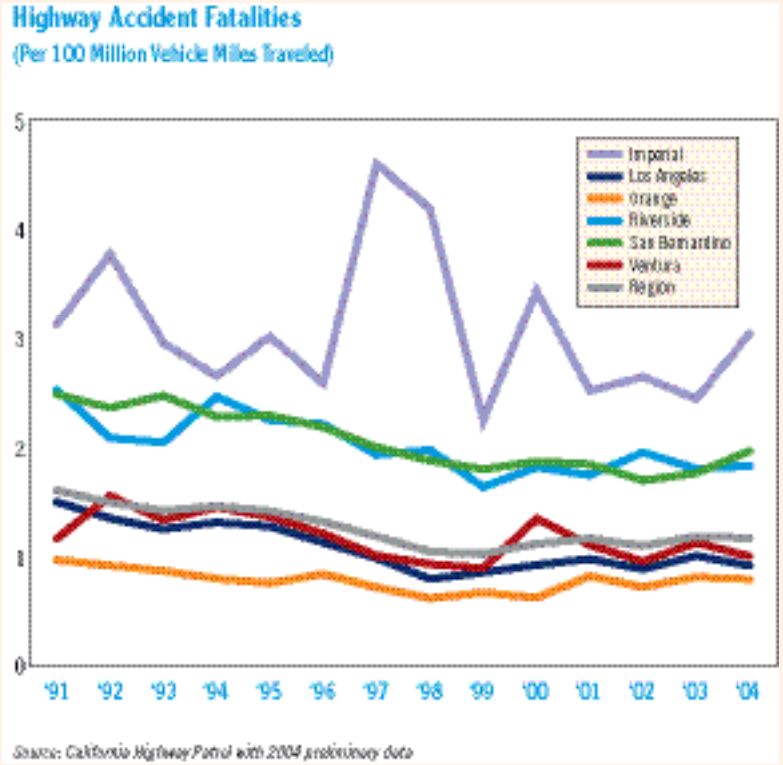
cent reduction in the previous period.[8] This is the second consecutive year in which highway fatalities declined at the national level

Since the passage of a state law in 1992 requiring seat belt use, the number of highway fatalities in the region had been generally declining until 1998, achieving a 27 percent reduction (or almost 400 fewer deaths) during the period. However, since 1998 the number of fatalities in the region has seen an upward trend. California continues to have a higher percentage of passenger vehicle occupants using seat belts than the nation, 91 percent vs. 79 percent. In addition, about 58 percent of the fatally injured occupants in California used seat belts compared to only 43 percent at the national level.[9] According to statewide data, about 40 percent of the fatal collisions were caused by drunk driving or involving alcohol. Nationally, the percent of alcohol-related fatalities has declined from 60 percent to 40 percent since 1982.

Young drivers who are between 16 and 24 years old have consistently had the highest fatality rate among different age groups, more than double the fatality rate of the general population. Older drivers who are 74 years or older have the second highest fatality rate among different age groups, about 50 percent higher than that of the general population. Also, as to the pedestrian fatality, California had the 8th highest rate (1.98 deaths per 100,000 population) among all states in 2003. This is about 20 percent higher than the national average at 1.63.

With respect to highway fatality rates, the six counties in the region were in three distinct groups (Figure 45). Imperial County has consistently had the highest highway fatality rates partly due to its also having the fastest average speed. The Inland Empire (Riverside and San Bernardino) counties shared similar fatality rates, though lower than Imperial County's. Finally, the three coastal counties (Los Angeles, Ventura and Orange) also share similar fatality rates. Partly

Figure 45



due to congestion and lower average speed, theirs were lower than the fatality rate of the Inland Empire.

Between 2003 and 2004, highway fatality rates increased in Imperial and San Bernardino while decreasing in Ventura and Los Angeles counties. The highway fatality rates in Riverside and Orange Counties remained almost unchanged. *In 2004, the region's highway accident fatality rate at 1.18 persons per 100 million vehicle miles traveled was significantly higher than the national average (0.94 persons per 100 million vehicle miles traveled) for urban areas.*[10] *The highway fatality rate in the region in 2004, though about the same as in 2003, continued to be the highest since reaching its lowest level in 1998. However, at the national level, the fatality rate in 2004 was the lowest recorded since three decades ago.*

Transit Use and Performance

Why is this important?

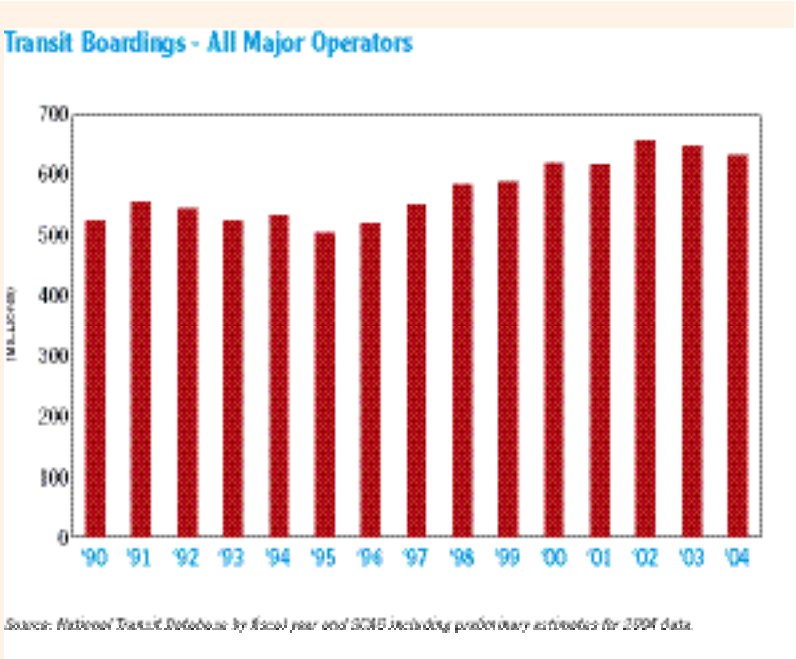
Use of public transit helps to improve congestion and air quality and decrease energy consumption. Reliable and safe transit services are essential for many residents to participate in economic, social and cultural life in Southern California. Annual transit boardings measures transit use at the system level, while transit trips per capita provides a measure of transit use at the individual level.

How are we doing?

Total transit boardings in the region in FY 2004 (from July 2003 to June 2004) declined by about 2 percent, from 649 million to 633 million, due to the labor strike of the MTA transit system (Figure 46). *The MTA system generally accounts for more than 60 percent of the regional total in transit boardings. During FY 2005, the MTA system recovered more than its loss in FY 2004 and the regional total of transit boardings should also exceed its FY 2003 level.*

During October and November 2003, the MTA transit system was shut down for 34 days due to a labor strike. Total annual boardings in the MTA transit system dropped significantly from about 419 million in FY 2003 to 382 million in FY 2004, a 37 million (9 percent) decline.

Figure 46



Source: National Transit Database by fiscal year and SCRIP including preliminary estimates for 2004 data.

The non-MTA portion of the transit system actually experienced an increase of 21 million (9 percent) between FY 2003 and FY 2004. In addition, if excluding the strike period, average weekday boardings for the MTA transit system increased slightly from 1.29 million to 1.3 million due to the start of service from the Gold Line with average weekday boardings of 15,000. More importantly, during FY 2005 the MTA transit system achieved an increase of 57 million (15 percent) to reach total boardings of 439 million, more than recovering the loss in the previous period.

Transit ridership is impacted by factors both external and internal to the transit system. External factors include residential and employment density, private automobile ownership rate, availability and price of parking, land use mix and urban design, and public finance. Internal factors are related to service quantity (e.g. frequency), service quality (e.g. reliability and convenience) and cost of transit service relative to other available modes.

Transit use accounted for about 2 percent of all trips in the region. Major barriers to further transit system development and higher transit use include an auto-oriented urban structure, inadequate level of service and a lack of geographic coverage (or insufficient destinations).[11] On an average weekday, about 30 percent of all transit trips were home-work trips, 47 percent home-other trips and 11 percent home-shopping trips.[12] Among transit users, only a fifth are regular users who make seven or more transit trips per week. However, they make up nearly half of all transit trips. In addition, lower-income residents generally have higher rate of transit uses than higher-income residents. The rate for Hispanics using transit is four times higher than that for non-Hispanic Whites.[13]

Transit trips per capita declined slightly from 37 in FY 2003 to 35 in FY 2004, which was below the 1990 level of 36. The region's transit system is experiencing substantial overcrowding on a number of core urban bus routes while it has significant excess capacity on most off-peak and peripheral routes.[14] Transit service utilization as measured by seat miles available is generally less than 35 percent, except for light rail with close to 60 percent utilization.

To promote transit ridership, it is important to promote transit-supportive land use strategies. These include more transit-oriented development, exploring strategies to improve travel time and intercounty transit services, and pursuing innovative funding, among others.

Journey to Work: Travel Time

Why is this important?

Though the share of work trips among total trips has been declining, work trips continue to generate disproportionately higher impacts on the regional transportation system. Work trips tend to take longer than other daily trips. In addition, commute hours are generally the period with the most traffic congestion. Accordingly, transportation investments are still influenced significantly by the nature of work trips. Finally, the choice of residential location is partly determined by the location of work and the associated journey to work.

How are we doing?

Between 2003 and 2004, average travel time to work increased very slightly (0.7 minutes) to 28.8 minutes in the region.

This continued to be higher than the state (27 minutes) and national (25 minutes) averages.[15] In 2004, workers in Riverside County continued to have the highest average travel time to work in the region, 31 minutes. However, workers in Orange County experienced the largest annual increase from 25.6 to 27 minutes between 2003 and 2004.

Journey to Work: Mode Choices

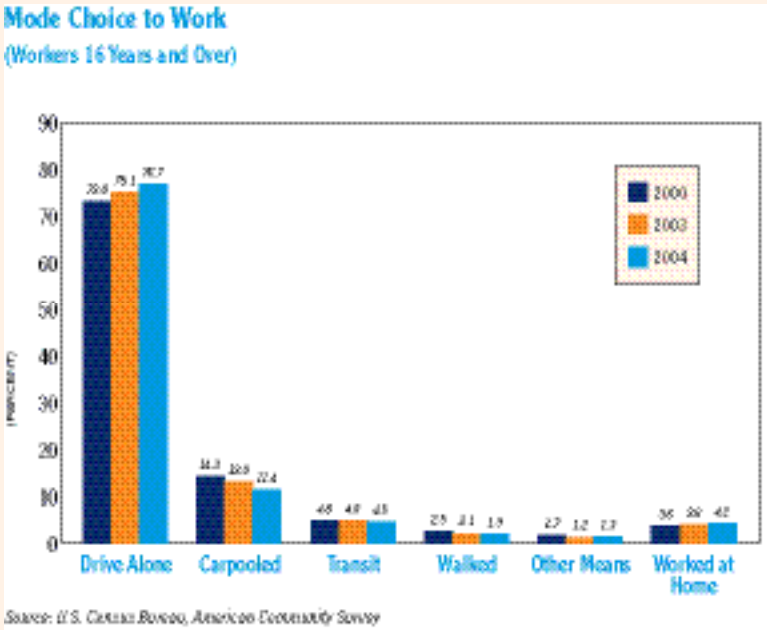
Why is this important?

Single-occupant vehicle use accounts for the highest level of land consumption among all transportation modes. It also generates the highest level of environmental, economic and social impacts. Increasing the use of alternative modes to work (e.g., carpool, transit, etc.) is critical to accommodate future growth with less environmental, economic and social impacts.

How are we doing?

From 2000 to 2004, there was a decrease in the region's carpooling share of work trips from 14.3 percent to 11.4 percent, and increases in the share of drive-alone commuting, from 73 percent to 76.7 percent (Figure 47). This was similar to the trend at the national level though the magnitude of decline in carpooling share was much larger in the SCAG region. In 2000, among the nine largest metropolitan regions, the region had the highest rate (14.3 percent) of workers who carpooled to work and the third lowest rate (4.8 percent) for using transit to get to work. Among those who carpooled, most (close to 80 percent) were in a 2-person carpool, and the remaining 20 percent were in 3-or-more-person carpools.[16] In 2004, the region's share of workers using public transit for commuting was 4.5 percent, little changed from the previous year.

Figure 47



Within the region, San Bernardino County experienced the largest decline in carpooling rates, dropping from 16.5 percent to 12.1 percent between 2003 and 2004. Carpooling share in Riverside County, though declined from 15.6 percent to 14.1 percent during the same period, was the highest in the region. The average vehicle occupancy for work trips in the region was about 1.1 persons per vehicle.

In 2004, about 4.2 percent of workers in the region worked at home instead of commuting to a workplace, an increase from 3.4 percent 2 years ago. About half of these were self-employed and worked exclusively at home. On average, workers who worked at home were older than those working outside the home. In addition, about one-third were in professional and service industries.

Airports

Why is this important?

Air transportation is vitally important to the regional economy of Southern California. Because of its geographical location, Southern California relies heavily on air transportation services to access and interconnect with domestic and foreign markets. For example, airborne exports accounted for over 50 percent of the total value of commodity exports out of the Los Angeles Customs District (LACD) in 2004.[17] Adequate aviation capacity and quality services are essential to the tourism, business, and trade sectors of the regional economy.

How are we doing?

In 2004, with the recovery of the travel and tourism industry, total air passengers in the region experienced a significant increase of 7.2 million (9.1 percent) reaching 86 million (Figure 48). This represented a significant rebound after the record losses of 10 million air passengers between 2000 and 2003. Nevertheless, total air passengers in 2004 were still below the 2000 (pre-September 11) level of 89 million. Among the 86 million passengers, about 69.5 million (or 79 percent) were domestic while 16.5 million (or 21 percent) were international.

Among the airports in the region, Los Angeles International (LAX) achieved the most important turnaround (Figure 49). After losing 13 million air passengers between 2000 and 2003, LAX experienced a 5.7 million increase to reach close to 61 million in 2004. In addition, John Wayne Airport increased by more than 0.8 million to reach 9.3 million.

Figure 48

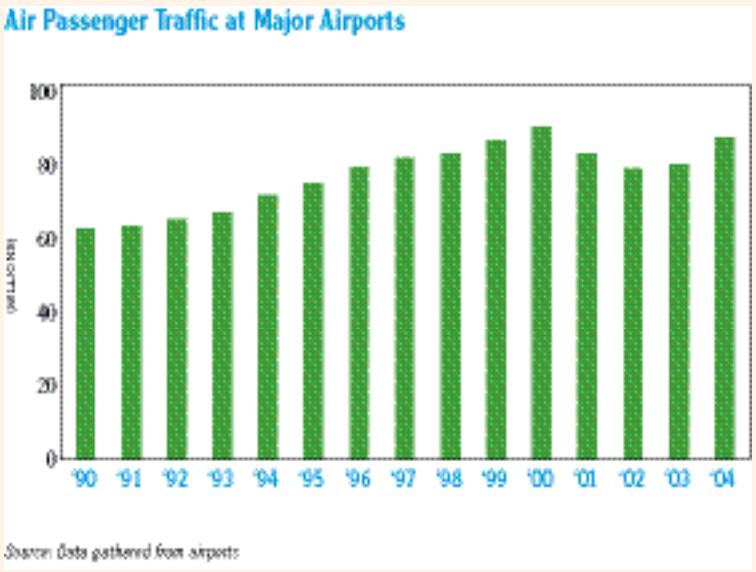


Figure 49

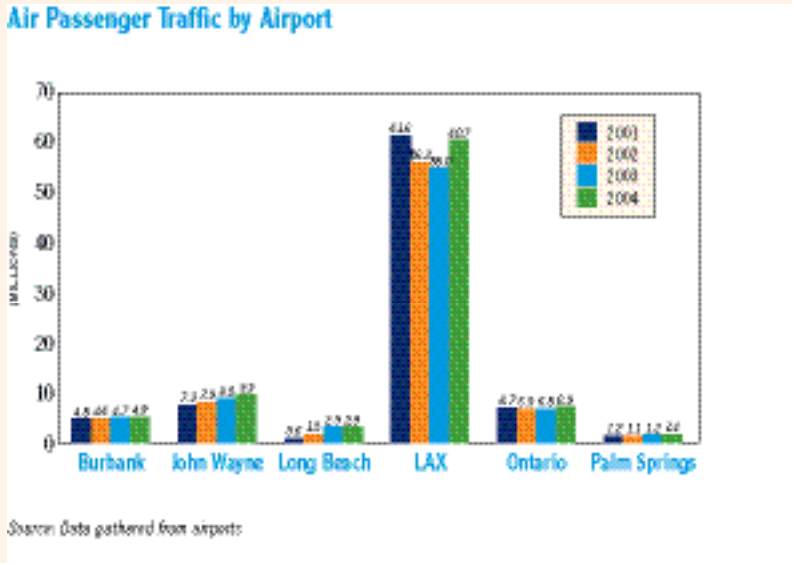
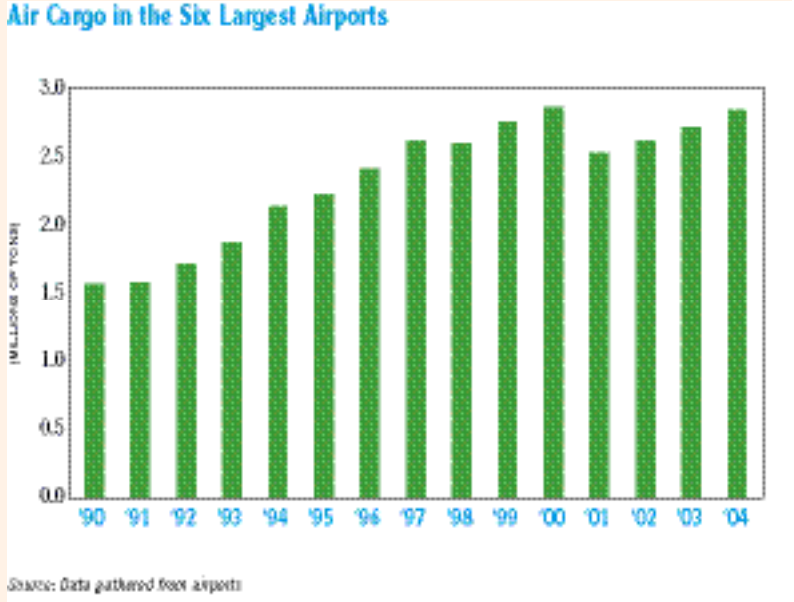


Figure 50



Total air cargo in the region increased by 4.8 percent and reached over 2.8 million tons in 2004, just below the pre 9/11 level. This was a little more than the 3.5 percent increase during the previous year but was still below the 5.4 percent average annual growth rate between 1970 and 2000 (Figure 50). Close to three-quarters of the region's air cargo traffic went through LAX while another 21 percent went through Ontario Airport. By 2030, total air cargo in the region is projected to reach 8.7 million tons, more than triple its 2004 level.[18]

LAX is a major U.S. hub for trade with Pacific-rim countries among which South Korea, Japan and Taiwan accounted for nearly 50 percent of the total tonnage transported. Some of the major commodities exported through LAX are vegetables and fruits, clothing, computer equipment and medical instruments, while the leading imports are

apparel, computer equipment, audio and video media, and office machinery. LAX is one of the only three major freight gateways in the nation that handles more exports than imports in value terms.

In 2004, among the ten largest airports in the world, LAX ranked 5th in passenger traffic behind Atlanta, Chicago, London and Tokyo (see Figure 81). As to the growth rate in 2004, LAX ranked third with 10 percent following Denver (13 percent) and Dallas-Forth (12 percent).

LAX also ranked 6th in total cargo volumes following Memphis, Hong Kong, Tokyo, Anchorage and Seoul (see Figure 82). Among the ten largest airports, LAX had the lowest growth rate (4.3 percent) in 2004 while Hong Kong (17 percent) had the highest followed by Seoul (16 percent).

Ports

Why is this important?

Almost 85 percent of the imports coming through the Los Angeles Customs District (LACD) arrive at the region's ports.[19] Continuing to provide a world-class port infrastructure is critical to sustaining a growing and prosperous regional economy.

How are we doing?

Total traffic at the Ports of Los Angeles and Long Beach increased from 164 million tons in 2003 to 178 million tons in 2004, an 8.3 percent increase (Figure 51). Between 2003 and 2004, traffic at Port Hueneme increased by 18 percent, from 3.4 to 4 million tons. Only about 6 percent of the cargo shipments at Port Hueneme were through containers.

In 2004, the Los Angeles/Long Beach port complex ranked fifth in the world in container traffic (13.1 million TEUs – twenty-foot equivalent units) following Hong Kong (22 million), Singapore (20.6 million), Shanghai (14.6 million) and Shenzen, China (13.6 million).[20] By 2020, total container traffic at the twin-ports is projected to almost triple their 2004 level, reaching 36 million TEUs.[21]

Figure 51

The twin-ports accounted for about 27 percent of the value of total U.S. international waterborne trade.[22] They are major gateways for imports with inbound shipments accounting for more than 80 percent of the value of freight it handled. In 2004, the twin-ports also maintained their dominant role among West Coast ports, attracting almost 57 percent of the total traffic. The continuing dominance of Ports of Los Angeles and Long Beach is partly due to their large regional market as